Abstract of the Invention

A method and software program for determining printability of a defect on a reticle or photomask onto a substrate during processing. That is performed by creating a pixel grid image having a plurality of individual pixel images showing the

5   defect. A gray scale value is assigned to each pixel image of the pixel grid image and a probable center pixel of the defect is selected. Then the polarity of the defect is determined, with a coarse center pixel of the defect optionally selected using the probable center defect and polarity of the defect. If a coarse center pixel is selected, then a fine center of the defect can optionally be selected from the coarse center pixel

10 and polarity of the defect. From the center pixel the physical extent of the defect can be determined followed by the determination the transmissivity energy level of the physical extent of the defect. Optionally, the proximity of the defect to a pattern edge on the reticle or photomask can be determined using the physical extent and polarity of the defect. Then the printability of the defect can be determined from the

15 transmissivity energy level of the defect and characteristics of the wafer fabrication process being used to produce the substrate from the reticle or photomask.

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